

# Community Meeting

## Drinking Water Notice

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*Eric Kramer, Utilities Superintendent, City of IGH*

*Karla Peterson, Public Health Engineer, MN Department of Health*

*February 28, 2023*



CITY OF  
INVER GROVE  
HEIGHTS

**PUBLIC WORKS DEPARTMENT**

[www.ighmn.gov](http://www.ighmn.gov)

# Meeting Outline

- Introductions
- Water System & Treatment Plant Operational Statistics
- Monitoring & Testing
- What is Radium?
- What is City's Response
  - Communication
  - System Compliance
- Next Steps in Monitoring & Compliance
- Open Question Forum

# Water System Statistics

- One (1) Water Treatment Plant
  - Constructed in 1998, Expanded in 2006
  - Chemical Treatment, Oxidation, & Filtration
  - Can treat up to 12 million gallons of water per day
- Seven (7) Groundwater Wells
- Four (4) Storage Reservoirs
- 170 Miles of Watermain
- Serve 7,766 Customer Accounts

# Water Treatment Plant

## Water Treatment Process – 3 Steps

### 1. Chemical Injection

- Chlorine to remove iron
- Manganese Sulfate to remove radium
- Potassium Permanganate → Oxidizes Chlorine & Manganese Sulfate to create a filterable solid (coagulation)

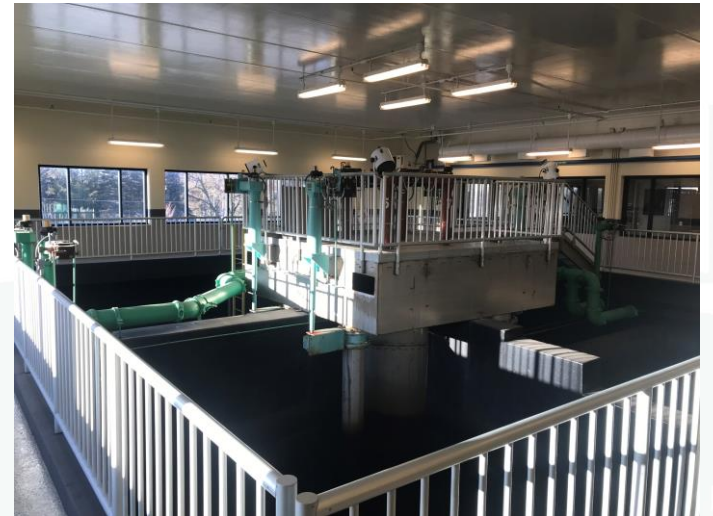
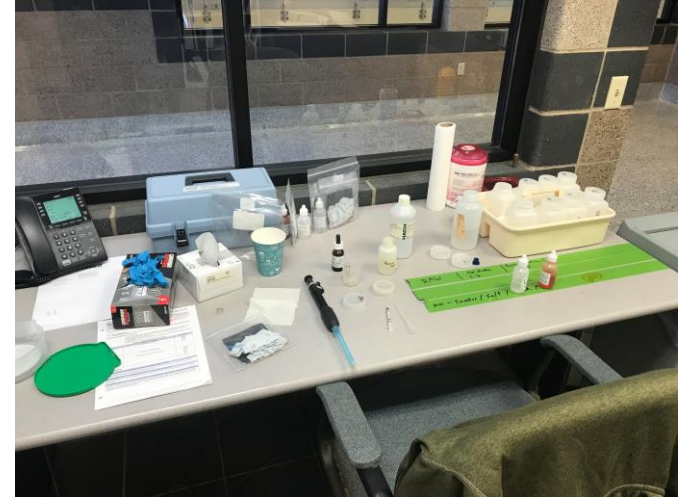
### 2. Filtration

- Silica Sand Filters → Filters out converted solids
- Filters are backwashed (cleaned) regularly, based on the monitored chemical removal efficiency

### 3. Disinfection

- Chlorine for disinfection (2<sup>nd</sup> injection)
- Fluoride to reduce tooth decay
- Clearwell to mix water and ensure adequate chlorine contact time for disinfection

# Water Treatment Plant



# Water Treatment Plant

## Drinking Water Testing

### 1. Bacteria Testing

- 30 system samples per month (per MDH requirements)
- Tested at Tri-City Lab (City of Bloomington)

### 2. Treatment Chemicals

- City samples and test at lab at treatment plant
- Test for effectiveness and removal efficiency
- Daily tests for treatment chemicals (Chlorine, Manganese, & Fluoride)

### 3. Regulated & Unregulated Substances

- Tested by MDH (quarterly or annually)
- Regulated Substances Include Copper, Lead, Radium, Chlorine, and Fluoride
- Unregulated Substances Include Sodium & Sulfate

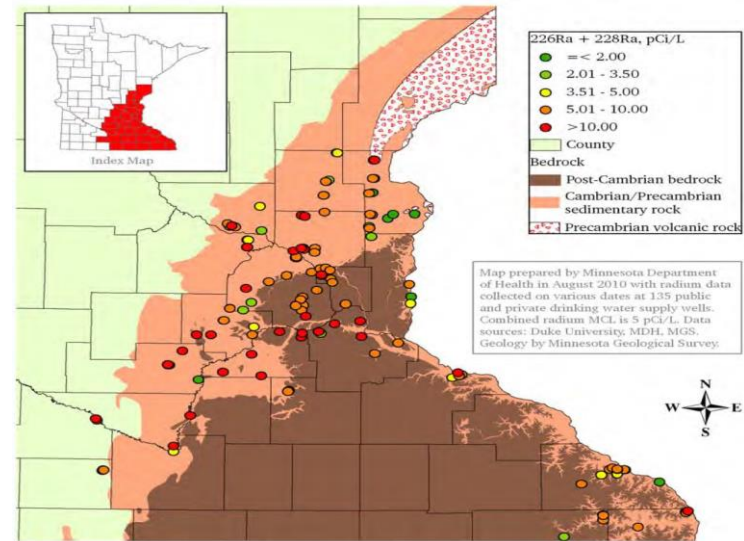
# Monitoring & Testing

- MDH is responsible for implementing the federal Safe Drinking Water Act (SDWA) in Minnesota, which includes:
  - Monitoring water quality for more than 100 contaminants in drinking water
    - Naturally-occurring (Radium, Arsenic, etc)
    - Human-caused (Nitrate, VOCs, SOCs, etc)
  - Issuing water quality violations
- Beyond implementing the SDWA, MDH also provides technical assistance for public water systems



# What is Radium?

- Radium 226/228 is naturally occurring throughout the Upper Midwest and Minnesota
- Maximum Contaminant Level (MCL) is 5.4 pCi/L
- Long-term exposure may result in certain health concerns
- Certain types of home softeners and reverse osmosis units have shown effectiveness at removing radium
  - Carbon-based filters are not effective

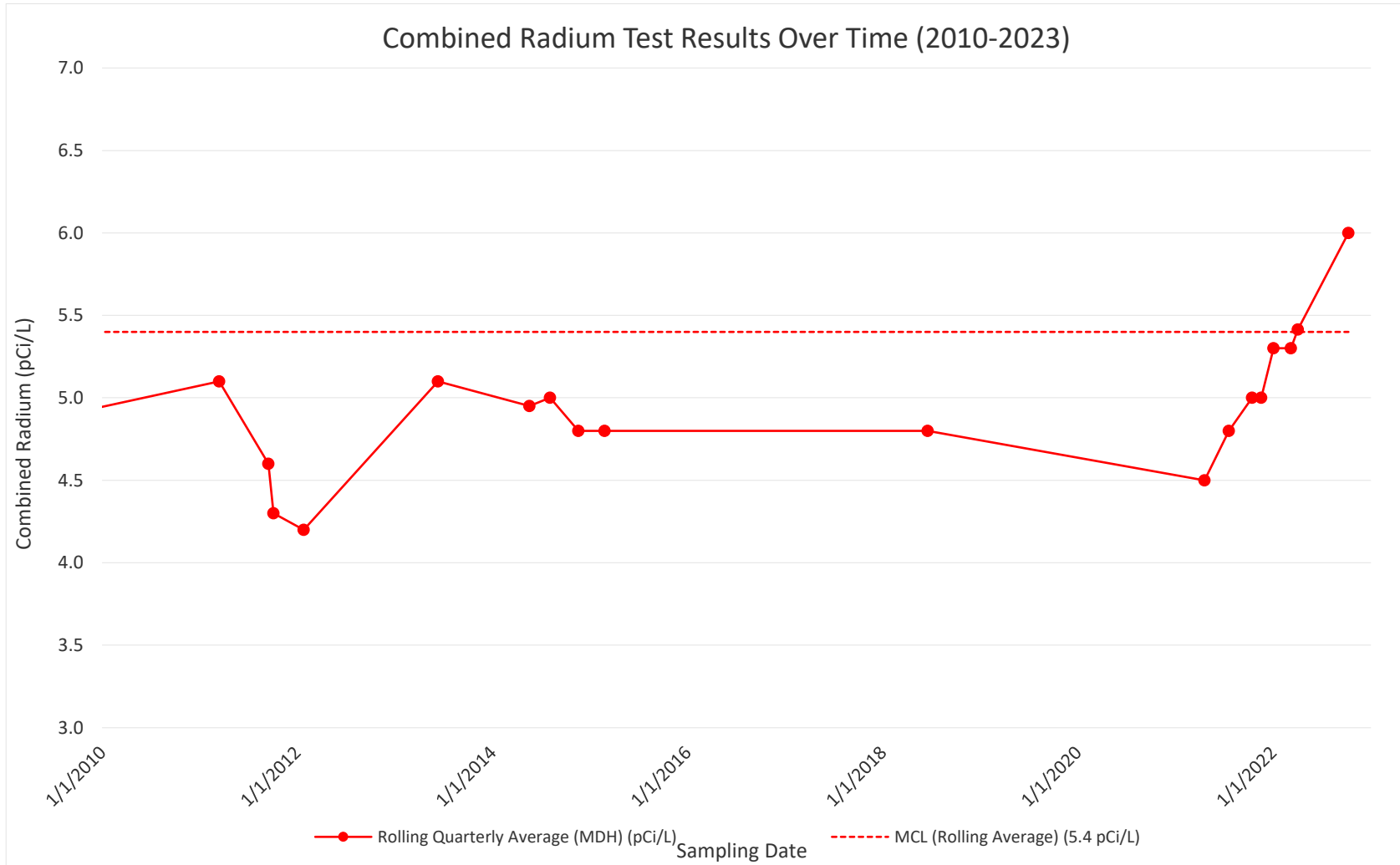




# Radium Testing Results

- Analysis for radium can take several months for results to be available
- Results are averaged over time to reflect the chronic accumulative health effect
- Four quarters worth of samples are collected to determine compliance (rolling quarterly average)
- IGH started their most recent quarterly monitoring schedule in October 2021.
  - Technical difficulties at the laboratory at the end of 2022, so the normal quarterly monitoring tests took longer than anticipated, with the fourth quarter results being released in January 2023.

# IGH Radium Testing Results



# How the City is Responding

## Two Primary Goals

- 1) Be transparent in our communication with the public.**
- 2) Bring the IGH water system into compliance with drinking water standards as quickly as possible.**

# Communication

- Public Notice
  - Required by MDH within 30-days of receiving non-compliant test results
  - MDH requires public notice from one or more of the following:
    - Local Paper Publication
    - Local TV or Radio Notice
    - Hand-Delivery of Notice
    - Direct Mailing to all Water Customers
  - Mailed to 8,052 IGH water customers on 2/15/23
    - 7,766 Customer Accounts (residents & businesses)
    - 286 Secondary (Landlord/Management Company Accounts)
    - Postmarked 16 days after MDH notice received on 1/30/2023
- Notices Not Sent To:
  - Properties that use private well water (not on IGH system)
  - Properties who get water from South St. Paul or Eagan water systems (approximately 600 properties)
  - Renters (landlords/management companies were requested to post notice)

# Communication

- Developed Informational Website
  - [www.ighmn.gov/waternotice](http://www.ighmn.gov/waternotice)
  - Links to MDH resources & past testing data
  - Frequently Asked Questions (English & Spanish)
  - Will post future test results and notices for radium compliance
  - Contact information for City staff for questions
  - Sign-up for email updates
- Community Meeting
  - Aired live on Town Square TV and streamed online
  - Recorded for future website posting
  - City and MDH staff available to answer questions and address concerns directly

# Achieving Compliance

- City made operational adjustments in April 2022
  - Shifted pumping to lowest-radium concentration wells
  - Resulting MDH tests showed a decrease in radium levels (partial results received in August 2022)
- Additional operational adjustments in January 2023
  - Followed notification from MDH of elevated radium levels from October 2022 test samples
  - Adjusted pumping operations, adjusted chemical injection, and modified filter backwash frequency.

# Achieving Compliance

- City Hired Chemical Engineering Consultant
  - Reviewed chemical treatment and backwashing operations
  - Recommended revising chemical feed volumes to address radium removal more effectively
  - Recommended chemical feed pump replacement
  - MDH took a set of samples for radium testing on 2/9/2023 to test for effectiveness of additional modifications (Pending test results in late-March)
- Will make Additional Adjustments as test Results Warrant
  - Monitoring effectiveness daily through manganese removal efficiency (marker for radium removal)



# Achieving Compliance

- Capital Improvements to Water Treatment Plant
  - Filter replacement and systems rehabilitation are part of Capital Improvement Plan (2024)
  - Contract for engineering design in summer, 2023
  - Estimated Improvement Cost: \$2.8 Million
- Filter replacement is overdue
  - Typical filters last 10-20 years, IGH filters are between 17 and 25 years old
  - Advances in sand filtration will provide better radium and other chemical removal once completed

# Next Steps in Monitoring

- MDH will continue to monitor water quality in coordination with recent and long-term improvements
  - MDH will sample water quality at least every 3 months, and the next sample is scheduled for April
  - Public will be notified quarterly with water quality data
    - [www.ighmn.gov/waternotice](http://www.ighmn.gov/waternotice)
  - Final public notice will be issued once IGH has achieved regulatory compliance

# Open Forum - Questions

Questions after tonight's meeting?

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